

Frank Chen

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Interest

I am interested in data science and how it can be applied in Program Management (PM). **I am currently a PM at Microsoft**, and have conducted machine learning research at JPL & UCLA.

Education

University of California, Los Angeles Fall 2013 - Spring 2017
B.S. Computer Science, Henry Samueli School of Engineering & Applied Science
GPA: 3.42/4.0

Relevant Skills & Courses

Programming Languages: C/C++, MATLAB, Python, Javascript, OCaml
Courses: Intro to Machine Learning, Intro to AI, Mathematical Modeling, Scalable Internet Service, Computer Security, Computer Networks, Linear Algebra, Intro to Probability, Formal Languages & Automata, Databases, Algorithms, Data Structures

Academic Experience

Center for Vision, Cognition, Learning & Autonomy March 2016 - present
Undergraduate Researcher | PI: Dr. Song-Chun Zhu | Mentor: Nishant Shukla
* Research in causal relationships, fluent extraction, and causal learning
* Implemented detection + tracking modules in OpenCV for teaching robots to fold shirts
* Built fluent visualization modules to learn a generative grammar model from raw robot data
* Submitted paper to the International Joint Conference on Artificial Intelligence (IJCAI)
* Submitted paper to Neural Information Processing Systems (NIPS) conference

Jet Propulsion Laboratory

June 2015 - June 2016

Computer Vision Research Intern | PI: Dr. Thomas Lu
* Spearheaded frame by frame tracking of IR multi-bandwidth images
* Achieved 90% accuracy in segmentation of images using neural network
* Published paper on correlation optimization at SPIE 2016 conference in Baltimore, MA.
* Paper on neural network segmentation is in proceedings of the SPIE 2017 conference.

Work Experience

Microsoft

July 2017 - present

Program Manager | Manager: Thom Thornton
* Drive Azure ML incident routing project in Enterprise Infrastructure Services
* Integrate business process management across Microsoft orgs, as part of the big data team

Workday

June - September 2016

Application Development Intern | Manager: Phyllis Thompson
* Implemented tax location mapping reports as part of Workday 28 product release
* Created get/put APIs for Workday Web Services
* Actively involved in Workday's agile development pipeline

Taboola

March - June 2016

Software Engineering Intern | Manager: Chris Germano

- * Implemented user authentication system using React.js and Node.js
- * Built modules to communicate with Taboola Backstage API from scratch

Daily Bruin

September 2014 - March 2016

Project Manager | Mentor: Simon Zou & Jimmy Yang

- * Spearheaded complete redesign of Spectrum, Daily Bruin's online Photo Blog
- * Led a team to build an interactive web application for UCLA's dorm communities
- * Presented workshops on Sublime Text + Git tools for incoming Daily Bruin staff

Teaching Experience

Undergraduate Student Initiated Education (USIE) September 2016 - June 2017

Seminar Instructor | Website: <http://kfrankc.me/cs88s> | Faculty Advisor: Dr. Peter Reiher

- * Designed a 10-week undergraduate computer science seminar (CS 88S) to introduce students to cybersecurity fundamentals & protecting themselves in cyberspace
- * Reached an international audience, with more than 1400 people subscribed to my weekly email updates on topics and relevant articles covered in the course
- * Topics included general introductions to: computer networking, cryptography, password cracking, wireless vulnerabilities, denial of service attacks

The Coding School

September 2015 - January 2016

Student Instructor

- * Organized computer science classes for middle school children on HTML/CSS/Javascript
- * Spearheaded a lesson on Github & using that to host a personal website

Software & Notable Projects

Los Angeles Urban Crime Patterns - Data science project on LA crime patterns

Used crime data in the past 10 years from Los Angeles Sheriff website to analyze crime patterns in location, type, frequency, and day/month/year. Final project for CS 170A: Mathematical Modeling. http://kfrankc.me/files/CS170A_project.pdf

NATCAR - Autonomous RC line-following car

Design, build, and race autonomous RC car on tracks marked by a 1"-wide white tape
Implemented computer vision, motor control, 3D-printing, & circuit design to build the RC car
1st place @ UC Davis NATCAR Competition 2015
<https://www.youtube.com/watch?v=Zx1SNIKpR9Y>

FluentVisualizer - Visualizing high-dimensional robot action data in a 3D space

Designed a web UI to visualize fluent changes in a robot's arm movement using t-Distributed Stochastic Neighborhood Embedding, decomposing 7-dimensional data into 3 dimensions.

Perfusion Angiography Visualization - Visualize blood flow in angiography videos

Designed a breadth-first-search algorithm to intelligently generate vector fields that follow blood vessel flow in perfusion angiography video frames, and used Javascript framework to visualize blood flow in a web UI.
<https://kfrankc.me/cs188/>

DJ Set Review w/ Data - Understand how DJs prepares their set using music data

Reviewed the methods and techniques The Chainsmokers used to prepare their set piece at Ultra Music Festival 2016 by analyzing the bpm, bass drop intensity, and time variation between mixes using Highcharts.js.

<https://kfrankc.me/chainsmokers/>

Publications & Presentations

Cross-correlation and image alignment for multi-band IR sensors

Kang (Frank) Chen, Andrew Luong, Mallory Dewees, Xinyi Yan, Thomas Lu, Tien-Hsin Chao, Edward Chow, Gilbert Torres

SPIE Optical Pattern Recognition XXVII 2016 | Baltimore, MD

Intelligent multi-spectral IR image segmentation

Kang (Frank) Chen, Andrew Luong, Stephen Heim, Maharshi Patel, Thomas Lu, Tien-Hsin Chao, Edward Chow, Gilbert Torres

SPIE Optical Pattern Recognition XXIX 2017 | Anaheim, CA

Unsupervised learning of fluents from human demonstrations

Nishant Shukla, Yunzhong He, **Kang (Frank) Chen**, Song-chun Zhu

Submitted to Neural Information Processing Systems (NIPS) 2016

Learning Human Utility from Video Demonstrations for Deductive Planning in Robotics

Nishant Shukla, Yunzhong He, **Kang (Frank) Chen**, Song-chun Zhu

Accepted at The International Conference on Robot Learning (CoRL) 2017

Visualizing Human Utility from Video Demonstrations for Deductive Planning in Robotics

Kang (Frank) Chen, Nishant Shukla, Song-chun Zhu

UCLA Undergraduate Research Poster Day. Research Poster

Intelligent Image Processing and Feature Extraction from Multiple IR Video Images

Kang (Frank) Chen, Andrew Luong, Mallory Dewees, Xinyi Yan

JPL Summer Research Symposium, August 2015. Pasadena, CA. Section Presentation

Intelligent IR Image Correlation and Segmentation

Kang (Frank) Chen, Andrew Luong, Kevin De Jesus, Maharshi Patel

JPL Winter Research Symposium, December 2015. Pasadena, CA. Section Presentation

Honors and Awards

Upsilon Pi Epsilon Honor Society

March 2014 - present

Eta Kappa Nu Honor Society

March 2015 - present

Henry M. Showman Prize in Undergraduate Research

May 2017

Engineering Achievement for Student Welfare

May 2017

2017 Engineering Commencement Student Speaker

May 2017

Eric & Peggy Johnson Scholarship in Engineering

January 2017

True Bruin Distinguished Senior Finalist

November 2016

Gerald P. Popek Scholarship in Computer Science

January 2016

Harley L. Woods Family Scholarship

January 2015

Leadership

Technology & Service Co-Lead

July 2017 - present

- * Manage a committee of 13 Microsoft University Hires and 3 projects within the Core Services Engineering organization.

Resident Assistant

September 2015 - June 2017

- * Responsible for a floor of 90 residents in UCLA's residential dorms

IDEA Hacks Organizer

September 2015 - February 2016

- * Sponsorship organizer for the largest hardware-focused hackathon in the West Coast

LA Hacks Organizer

January 2015 - June 2017

- * Mentorship + Operations organizer for the largest hackathon in the West Coast

Engineering Society of UCLA

September 2014 - June 2015

- * External VP for the umbrella engineering club at UCLA

Bruin Entrepreneurs

September 2013 - June 2015

- * Led incubator program for UCLA's student entrepreneurs